

```

9      18      27      36      45      54
5' GCC CTA CCG TGT GCG CAG AAA GAG GAG GCG CTT GCC TTC AGC TTG TGG GAA ATC

63      72      81      90      99      108
CCG AAG ATG GCC AAA GAC AAC TCA ACT GTT CGT TGC TTC CAG GGC CTG CTG ATT
M   A   K   D   N   S   T   V   R   C   F   Q   G   L   L   I

117     126     135     144     153     162
TTT GGA AAT GTG ATT ATT GGT TGT TGC GGC ATT GCC CTG ACT GCG GAG TGC ATC
F   G   N   V   I   I   G   C   C   G   I   A   L   T   A   E   C   I

171     180     189     198     207     216
TTC TTT GTA TCT GAC CAA CAC AGC CTC TAC CCA CTG CTT GAA GCC ACC GAC AAC
F   F   V   S   D   Q   H   S   L   Y   P   L   L   E   A   T   D   N

225     234     243     252     261     270
GAT GAC ATC TAT GGG GCT GCC TGG ATC GGC ATA TTT GTG GGC ATC TGC CTC TTC
D   D   I   Y   G   A   A   W   I   G   I   F   V   G   I   C   L   F

279     288     297     306     315     324
TGC CTG TCT GTT CTA GGC ATT GTA GGC ATC ATG AAG TCC AGC AGG AAA ATT CTT
C   L   S   V   L   G   I   V   G   I   M   K   S   S   R   K   I   L

333     342     351     360     369     378
CTG GCG TAT TTC ATT CTG ATG ATG TTT ATA GTA TAT GCC TTT GAA GTG GCA TCT TGT
L   A   Y   F   I   L   L   M   F   I   V   I   V   A   F   E   V   A   S   C

```

FIGURE 1A

2/22

| | | | | | |
|---|-----|-----|-----|-----|-----|
| 387 | 396 | 405 | 414 | 423 | 432 |
| ATC ACA GCA GCA ACA CAA CGA GAC TTT TTC ACA CCC AAC CTC TTC CTG AAG CAG | | | | | |
| I T A A T Q Q R D F F T P P N L F L K Q | | | | | |
| 441 | 450 | 459 | 468 | 477 | 486 |
| ATG CTA GAG AGG TAC CAA AAC AAC AGC CCT CCA AAC AAT GAT GAC CAG TGG AAA | | | | | |
| M L E R Y Q Q N N S P P N N D D Q W K | | | | | |
| 495 | 504 | 513 | 522 | 531 | 540 |
| AAC AAT GGA GTC ACC AAA ACC TGG GAC AGG CTC ATG CTC CAG GAC AAT TGC TGT | | | | | |
| N N G V T K T W D R L M L Q D N C C | | | | | |
| 549 | 558 | 567 | 576 | 585 | 594 |
| GGC GTA AAT GGT CCA TCA GAC TGG CAA AAA TAC ACA TCT GCC TTC CGG ACT GAG | | | | | |
| G V N G P S D W Q K Y T S A F R T E | | | | | |
| 603 | 612 | 621 | 630 | 639 | 648 |
| AAT AAT GAT GCT GAC TAT CCC TGG CCT CGT CAA TGC TGT GTT ATG AAC AAT CTT | | | | | |
| N N D A D Y P P W P R Q C C C V M N N L | | | | | |
| 657 | 666 | 675 | 684 | 693 | 702 |
| AAA GAA CCT CTC AAC CTG GAG GCT TGT TGT AAA CTA GGC GTG CCT GGT TTT TAT CAC | | | | | |
| K E P L N L E A C K K L G V P P G F Y H | | | | | |
| 711 | 720 | 729 | 738 | 747 | 756 |
| AAT CAG GGC TGC TAT GAA CTG ATC TCT GGT CCA ATG AAC CGA CAC GCC TGG GGG | | | | | |
| N Q G C Y E L I S G P M N R H A W G | | | | | |

FIGURE 1B

3/22

| | | | | | |
|---|------|------|------|------|------|
| 765 | 774 | 783 | 792 | 801 | 810 |
| GTT GCC TGG TTT GGA TTT GCC ATT CTC TGC TGG ACT TTT TGG GTT CTC CTG GGT | | | | | |
| V A W F G F A I L C W T F W V L L G | | | | | |
| 819 | 828 | 837 | 846 | 855 | 864 |
| ACC ATG TTC TAC TGG AGC AGA ATT GAA TAT TAA GCA TAA AGT GTT GCC ACC ATA | | | | | |
| T M F Y W S R I E Y * | | | | | |
| 873 | 882 | 891 | 900 | 909 | 918 |
| CCT CCT TCC CCG AGT GAC TCT GGA TTT GGT GCT GGA ACC AGC TCT CTC CTA ATA | | | | | |
| 927 | 936 | 945 | 954 | 963 | 972 |
| TTC CAC GTT TGT GCC CCA CAC TAA CGT GTG TGT CTT ACA TTG CCA AGT CAG ATG | | | | | |
| 981 | 990 | 999 | 1008 | 1017 | 1026 |
| GTA CGG ACT TCC TTT AGG ATC TCA GGC TTC TGC AGT TCT CAT GAC TCC TAC TTT | | | | | |
| 1035 | 1044 | 1053 | 1062 | 1071 | 1080 |
| TCA TCC TAG TCT AGC ATT CTG CAA CAT TTA TAT AGA CTG TTG AAA GGA GAA TTT | | | | | |
| 1089 | 1098 | 1107 | 1116 | 1125 | 1134 |
| GAA AAA TGC ATA ATA ACT ACT TCC ATC CCT GCT TAT TTT TAA TTT GGG AAA ATA | | | | | |
| 1143 | 1152 | 1161 | 1170 | 1179 | 1188 |
| AAT ACA TTC GAA GGA AAA ACA AAA AGG GCG GCC CCC GAT TAT TGA GGG GTC | | | | | |

FIGURE 1C

4/22

| | | | | | |
|---|------|------|------|------|------|
| 1197 | 1206 | 1215 | 1224 | 1233 | 1242 |
| CCG AGC CCG AAC TCG TAA CCA TGT AAA ACC CGT TCC CCG GGG TAA AAT TGT AAT | | | | | |
| 1251 | 1260 | 1269 | 1278 | 1287 | 1296 |
| CCC CCC ACA ATT CCC CAA AAC ATA GGG CCC GGA AGC CTA AAG TTT AAA ACC CTG | | | | | |
| 1305 | 1314 | 1323 | | | |
| GGG GGG CCT AAG GAG TTT ACC CAA ACT CCC TTT CT 3' | | | | | |

FIGURE 1D

5/22

| | | | | | |
|--|-----|-----|-----|-----|-----|
| 10 | 19 | 28 | 37 | 46 | 55 |
| 5'TCGA CGC CAC CAT TTT AAA GGG ATT TAC TGC ACG GAC TTC TCC CAA GTT CCT AGG | | | | | |
| 64 | 73 | 82 | 91 | 100 | 109 |
| CAT TAT CTT CTG GAC CCT ATC CTG CAG AGG TGA AGC GTC CCT TTG GGG ACT CTC | | | | | |
| 118 | 127 | 136 | 145 | 154 | 163 |
| GCT GGG TGA GAG GGA CAA GAA ACA CCC ACT AGG ACC CAA CCC CGG CAG CCA GCG | | | | | |
| 172 | 181 | 190 | 199 | 208 | 217 |
| GCT CGA GCA TGC GCT GAG AGT TTG TGC AGC TGG CCC TGG CTG CCG CTG CCT | | | | | |
| 226 | 235 | 244 | 253 | 262 | 271 |
| CGT CCG GAC TCG GAG AGG ACT TGG GAG GGA CAG CAG CGC TGG GAG GTG GCT TAG | | | | | |
| 280 | 289 | 298 | 307 | 316 | 325 |
| CAG AGA CTT TCC AGC AAC TGC TGC CCA GGA CTT TTT TTT TTT TTC TTT TTC | | | | | |
| 334 | 343 | 352 | 361 | 370 | 379 |
| CCA GGA GGC GGC GAC GGC GGC GGC GGC AGA GGA AGA GAA AGA AGC GTC TCC | | | | | |
| 388 | 397 | 406 | 415 | 424 | 433 |
| AGC TGA AGC CAA TGC AGC CCT CCG GCT CTC CGC GAA GAA GTT CCC TGC CCC GAT | | | | | |
| 442 | 451 | 460 | 469 | 478 | 487 |
| GAG CCC CCG CCG TGC GTC CCC GAC TAT CCC CAG GCG GGC GTG GGG CAC CGG GCC | | | | | |

FIGURE 2A

6/22

| | | | | | |
|---|-----|-----|-------------------|-----|-----|
| 496 | 505 | 514 | 523 | 532 | 541 |
| CAG CGC CGA CGA TCG CTG CCG TTT TGC CCT TGG GAG TAG GAT GTG GTG AAA GGA | | | | | |
| 550 | 559 | 568 | 577 | 586 | 595 |
| TGG GGC TTC TCC CTT ACG GGG CTC ACA ATG GCC AGA GAA GAT TCC GTG AAG TGT | | | | | |
| | | | M A R E D S V K C | | |
| 604 | 613 | 622 | 631 | 640 | 649 |
| CTG CGC TGC CTG CTC TAC TAC GCC CTC AAT CTG CTC TTT TGG TTA ATG TCC ATC AGT | | | | | |
| L R C L L Y A L N L L L F W L M S I S | | | | | |
| 658 | 667 | 676 | 685 | 694 | 703 |
| GTG TTG GCA GTT TCT GCT TGG ATG AGG GAC TAC CTA AAT AAT GTT CTC ACT TTA | | | | | |
| V L A V S A W M R D Y L N N V L T L | | | | | |
| 712 | 721 | 730 | 739 | 748 | 757 |
| ACT GCA GAA ACG AGG GTA GAG GAA GCA GTC ATT TTG ACT TAC TTT CCT GTG GTT | | | | | |
| T A E T R V E E A V I L T Y F P V V | | | | | |
| 766 | 775 | 784 | 793 | 802 | 811 |
| CAT CCG GTC ATG ATT GCT GTT TGC TGT TTC CTT ATC ATG GTG GGG ATG TTA GGA | | | | | |
| H P V M I A V C C F L I I V G M L G | | | | | |
| 820 | 829 | 838 | 847 | 856 | 865 |
| TAT TGT GGA ACG GTG AAA AGA AAT CTG TTG CTT CTT GCA TGG TAC TTT GGA AGT | | | | | |
| Y C G T V K R N L L L L L L A W Y F G S | | | | | |

FIGURE 2B

7/22

| | | | | | |
|---|------|------|------|------|------|
| 874 | 883 | 892 | 901 | 910 | 919 |
| TTG CTT GTC ATT TTC TGT GTA GAA CTG GCT TGT GGC GTT TGG ACA TAT GAA CAG | | | | | |
| L L V I F C V E L A C G V W T Y E Q | | | | | |
| 928 | 937 | 946 | 955 | 964 | 973 |
| GAA CTT ATG GTT CCA GTA CAA TGG TCA GAT ATG GTC ACT TTG AAA GCC AGG ATG | | | | | |
| E L M V P V Q W S D M V T L K A R M | | | | | |
| 982 | 991 | 1000 | 1009 | 1018 | 1027 |
| ACA AAT TAT GGA TTA CCT AGA TAT CGG TGG CTT ACT CAT GCT TGG AAT TTT TTT | | | | | |
| T N Y G L P R Y R W L T H A W N F F | | | | | |
| 1036 | 1045 | 1054 | 1063 | 1072 | 1081 |
| CAG AGA GAG TTT AAG TGC TGT GGA GTA GTA TAT TTC ACT GAC TGG TTG GAA ATG | | | | | |
| Q R E F K C C C G V V Y F T D W L E M | | | | | |
| 1090 | 1099 | 1108 | 1117 | 1126 | 1135 |
| ACA GAG ATG GAC TGG CCC CCA GAT TCC TGC TGT GGT AGA GAA TTC CCA GGA TGT | | | | | |
| T E M D W P P P D S C C V R E F P G C | | | | | |
| 1144 | 1153 | 1162 | 1171 | 1180 | 1189 |
| TCC AAA CAG GCC CAC CAG GAA GAT CTC AGT GAC CTT TAT CAA GAG GGT TGT GGG | | | | | |
| S K Q A H Q E D L S D L Y Q E G C G | | | | | |
| 1198 | 1207 | 1216 | 1225 | 1234 | 1243 |
| AAG AAA ATG TAT TCC TTT TTG AGA GGA ACC AAA CAA CTG CAG GTG CTG AGG TTT | | | | | |
| K K M Y S F L R G T K Q L Q V L R F | | | | | |

FIGURE 2C

8/22

| | | | | | |
|---|------|------|------|------|------|
| 1252 | 1261 | 1270 | 1279 | 1288 | 1297 |
| CTG GGA ATC TCC ATT GGG GTG ACA CAA ATC CTG GCC ATG ATT CTC ACC ATT ACT | | | | | |
| L G I S I G V T Q I L A M I L T I T | | | | | |
| 1306 | 1315 | 1324 | 1333 | 1342 | 1351 |
| CTG CTC TGG GCT CTG TAT TAT GAT AGA AGG GAG CCG GGG ACA GAC CAA ATG ATG | | | | | |
| L L W A L Y Y D R R E P G T D Q M M | | | | | |
| 1360 | 1369 | 1378 | 1387 | 1396 | 1405 |
| TCC TTG AAG AAT GAC AAC TCT CAG CAC CTG TCA TGT CCC TCA GTA GAA CTG TTG | | | | | |
| S L K N D N S Q H L S C P S V E L L | | | | | |
| 1414 | 1423 | 1432 | 1441 | 1450 | 1459 |
| AAA CCA AGC CTG TCA AGA ATC TTT GAA CAC ACA TCC ATG GCA AAC AGC TTT AAT | | | | | |
| K P S L S R I F E H T S M A N S F N | | | | | |
| 1468 | 1477 | 1486 | 1495 | 1504 | 1513 |
| ACA CAC TTT GAG ATG GAG GAG TTA TAA AAA GAA ATG TCA CAG AAG AAA ACC ACA | | | | | |
| T H F E M E E L * | | | | | |
| 1522 | 1531 | 1540 | 1549 | 1558 | 1567 |
| AAC TTG TTT TAC TGG ACT TGT GAA TTT TTG AGT ACA TAC TAT GTG TTT CAG AAA | | | | | |
| 1576 | 1585 | 1594 | 1603 | 1612 | 1621 |
| TAT GTA GAA ATA AAA ATG TTG CCA TAA AAT AAC ACC TAA GCA TAT ACT ATT CTA | | | | | |

FIGURE 2D

9/22

| | | | | | |
|---|------|------|------|------|------|
| 1630 | 1639 | 1648 | 1657 | 1666 | 1675 |
| TGC TTT AAA ATG AGG ATG GAA AAG TTT CAT GTC ATA AGT CAC CAC CTG GAC AAT | | | | | |
| 1684 | 1693 | 1702 | 1711 | 1720 | 1729 |
| AAT TGA TGC CCT TAA AAT GCT GAA GAC AGA TGT CAT ACC CAC TGT GTA GCC TGT | | | | | |
| 1738 | 1747 | 1756 | 1765 | 1774 | 1783 |
| GTA TGA CTT TTA CTG AAC ACA GTT ATG TTT TGA GGC AGC ATG GTT TGA TTA GCA | | | | | |
| 1792 | 1801 | 1810 | 1819 | 1828 | 1837 |
| TTT CCG CAT CCA TGC AAA CGA GTC ACA TAT GGT GGG ACT GGA GCC ATA GTA AAG | | | | | |
| 1846 | 1855 | 1864 | 1873 | 1882 | 1891 |
| GTT GAT TTA CTT CTA CCA ACT AGT ATA TAA AGT ACT AAT TAA ATG CTA ACA TAG | | | | | |
| 1900 | 1909 | 1918 | 1927 | 1936 | 1945 |
| GAA GTT AGA AAA TAC TAA TAA CTT TTA TTA CTC AGC GAT CTA TTC TTC TGA TGC | | | | | |
| 1954 | 1963 | 1972 | 1981 | 1990 | 1999 |
| TAA ATA AAT TAT ATA TCA GAA AAC TTT CAA TAT TGG TGA CTA CCT AAA TGT GAT | | | | | |
| 2008 | 2017 | 2026 | 2035 | 2044 | 2053 |
| TTT TGC TGG TTA CTA AAA TAT TCT TAC CAC TTA AAA GAG CAA GCT AAC ACA TTG | | | | | |
| 2062 | 2071 | 2080 | 2089 | 2098 | 2107 |
| TCT TAA GCT GAT CAG GGA TTT TTT GTA TAT AAG TCT GTG TTA AAT CTG TAT AAT | | | | | |

FIGURE 2E

10/22

| | | | | | |
|---|------|------|------|------|------|
| 2116 | 2125 | 2134 | 2143 | 2152 | 2161 |
| TCA GTC GAT TTC AGT TCT GAT AAT GTT AAG AAT AAC CAT TAT GAA AAG GAA AAT | | | | | |
| 2170 | 2179 | 2188 | 2197 | 2206 | 2215 |
| TTG TCC TGT ATA GCA TCA TTA TTT TTA GCC TTT CCT GTT AAT AAA GCT TTA CTA | | | | | |
| 2224 | 2233 | 2242 | 2251 | 2260 | 2269 |
| TTC TGT CCT GGG CTT ATA TTA CAC ATA TAA CTG TTA TTT AAA TAC TTA ACC ACT | | | | | |
| 2278 | 2287 | 2296 | 2305 | 2314 | 2323 |
| AAT TTT GAA AAT TAC CAG TGT GAT ACA TAG GAA TCA TTA TTC AGA ATG TAG TCT | | | | | |
| 2332 | 2341 | 2350 | 2359 | 2368 | 2377 |
| GGT CTT TAG GAA GTA TTA ATA AGA AAA TTT GCA CAT AAC TTA GTT GAT TCA GAA | | | | | |
| 2386 | 2395 | 2404 | 2413 | 2422 | 2431 |
| AGG ACT TGT ATG CTG TTT TTC TCC CAA ATG AAG ACT CTT TTT GAC ACT AAA CAC | | | | | |
| 2440 | 2449 | 2458 | 2467 | 2476 | 2485 |
| TTT TTA AAA AGC TTA TCT TTG CCT TCT CCA AAC AAG AAG CAA TAG TCT CCA AGT | | | | | |
| 2494 | 2503 | 2512 | 2521 | 2530 | 2539 |
| CAA TAT AAA TTC TAC AGA AAA TAG TGT TCT TTT TCT CCA GAA AAA TGC TTG TGA | | | | | |
| 2548 | 2557 | 2566 | 2575 | 2584 | 2593 |
| GAA TCA TTA AAA CAT GTG ACA ATT TAG AGA TTC TTT GTT TTA TTT CAC TGA TTA | | | | | |

FIGURE 2F

11/22

2602 2611 2620 2629 2638 2647
ATA TAC TGT GGC AAA TTA CAC AGA TTA TTA AAT TTT TTT ACA AGA GTA TAG TAT

2656 2665 2674 2683 2692 2701
ATT TAT TTG AAA TGG GAA AAG TGC ATT TTA CTG TAT TTT GTG TAT TTT GTT TAT

2710 2719 2728 2737 2746 2755
TTC TCA GAA TAT GGA AAG AAA ATT AAA ATG TGT CAA TAA ATA TTT TCT AGA GAG

2764
TAA AAA AAA AAA A 3'

FIGURE 2G

12/22

| | | | | | |
|-----|----------------------|------------|---------|--------|-----------|
| 1 | MAKDNSTVRCFQGLLIFGNV | IIGCCG | IALTAE | CIF | 2651154 |
| 1 | MAKDDSTVRCFQGLLIFGNV | IIGMCS | IALMAEC | IF | g443785 |
| 36 | FVSDQHSLYP | LEATDNDD | IYGAAW | IGIFVG | ICLF |
| 36 | FVSDQNSLYP | LEATNNDD | IYAAW | IGMSVG | ICLF |
| 71 | CLSVLGI | VGIMKSSSRK | ILLAYF | ILMF | IYYAFEVAS |
| 71 | CLSVLGI | VGIMKSNRK | ILLVYF | ILMF | IYYAFEVAS |
| 106 | CITAA | TQRDFF | TPNLF | LKQML | ERYQNNSP |
| 106 | CITAA | TQRDFF | TPNLF | LKQML | ERYQNNSP |
| 141 | WKNNGV | TKTWDR | LM | LQDNCC | GVNGP |
| 141 | WKNNGV | TKTWDR | LM | LQDNCC | GVNGP |
| 176 | RTENN | DADYP | WP | PRQCC | VMMN |
| 176 | RTENS | DADYP | WP | PRQCC | VMMNS |
| 211 | GFYHN | QGCYEL | ISG | PPMNR | HA |
| 211 | GYYH | SHG | GCYEL | ISG | PPMNR |
| 246 | WVLL | GT | MF | YS | RIEY |
| 246 | WVLL | GT | MF | YS | RIEY |

FIGURE 3

09/830328

```

1  MAREDSVK - - - - - CLRCLLYALNLLFWLMSISVL 2674553
1  MGEFNEKK ATCGTVCLKYL LFTYNCCFWL AGLAVM g2447007

30 AVSAWMRDYLNNVLTLTAE TRVEEAVILTYFPVVH 2674553
36 AVGIWTLALKSDYISLLASS - - - - - TYLATAY g2447007

65 PVMIAVCCFLIIIVGMLGYCGTVKRNLLLLAWYFGS 2674553
63 - ILV VAGVVVMVTGVLGCCATFKERRNLLRLYFIL g2447007

100 LLVIFCVELACGVWVTYEQELMVPVQWSDMVT - LKA 2674553
97 LLIIIFLEIIAGILAY - - - - - VYYQQNTE LKE g2447007

134 RMTNYGLPRYRWLTH - - - - - AWNFFQREFKCCGVV 2674553
125 NLKDTMVKR YHQSGHEGVSS AVDKLQ QEFHCCGSN g2447007

164 YFTDWLEMTMDW - - - - - PPDSCCVREFPG 2674553
160 NSQDW - - - QDSEW IRSGEADSRVVPDSCCKTMVAG g2447007

189 CSKQAHQEDLSDL YQEGCGK KMYSF LRGTKQLQVL 2674553
192 CGKRDHASN IYKV - EGGCI TKLETFIQE - - HLRVI g2447007

224 RFLGISIGVTQ IILAM I LTI TLLWALYYDRREP GTD 2674553
224 GAVGIGIACVQVFSMI FTCCLYRSL - - - - - g2447007

```

FIGURE 4A

14/22

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|---------|
| 259 | Q | M | M | S | L | K | N | D | N | S | Q | H | L | S | C | P | S | V | E | L | L | K | P | S | L | S | R | I | F | E | H | T | S | M | A | 2674553 |
| 249 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | g2447007 | |
| 294 | N | S | F | N | T | H | F | E | M | E | E | L | | | | | | | | | | | | | | | | | | | | | | | 2674553 | |
| 249 | - | - | - | - | - | - | - | - | - | - | - | - | K | L | E | H | Y | | | | | | | | | | | | | | | | | | g2447007 | |

FIGURE 4B

15/22

1 G C C C - T A C C G T G T - - G C G C A G A A A G A G G A G G C C T 2651154dna
1 G C G T G C A G A G A G C C G A C A C A G T A C C A G G A G G A G G A 2651154dna
33 T G C C T T C A G C T T G T G G G A A A T C C C G A A G A T G G C C A 2651154dna
36 G G A G - - A G G C T T G G G G A A A T C C T G A A G A T G G C C A 2651154dna
68 A A G A C A A C T C A A C T G T T C G T T G C C T T C C A G G G C C T G 2651154dna
69 A A G A C G A C T C A C T G T T C G T T G C C T T C C A G G G C C T G 2651154dna
103 C T G A T T T T G G A A A T G T G A T T A T T G G T T G T T G C C G 2651154dna
104 C T G A T T T T G G A A A T G T G A T T A T C G G T A T G T G C A G 2651154dna
138 C A T T G C C C T G A C T G C G G A G T G C A T C T T C T T T G T A T 2651154dna
139 C A T C G C C C T G A T G G C A G A G T G C A T C T T C T T T G T A T 2651154dna
173 C T G A C C A A C A C A G C C C T C T A C C C A C T G C T T G A A G C C 2651154dna
174 C A G A C C A A A A C A G C C C T C T A C C C A C T G C T T G A A G C C 2651154dna
208 A C C G A C A A C G A T G A C A T C T A T G G G G C C T G C C T G G A T 2651154dna
209 A C C A A C A A T G A C G A C A T C T A T G C G G C A G C C T G G A T 2651154dna
243 C G G C A T A T T T G T G G G C A T C T G C C C T C T T C T G C C T G T 2651154dna
244 T G G C A T G T C T G T T G G C A T C T G C C C T C T T C T G C C T C T 2651154dna

FIGURE 5A

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 278 | C | T | G | T | T | C | T | A | G | G | C | A | T | T | G | T | A | G | G | C | A | T | C | A | T | G | A | A | G | T | C | C | A | G | C |
| 279 | C | T | G | T | C | C | T | G | G | C | A | T | C | G | T | A | G | G | C | A | T | C | A | T | G | A | A | G | T | C | C | A | A | C | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 313 | A | G | G | A | A | A | T | T | C | T | T | C | T | G | G | C | C | T | A | T | T | T | C | A | T | T | C | T | G | A | T | G | T | T | |
| 314 | A | G | G | A | A | A | T | T | C | T | T | C | T | G | G | T | G | T | A | T | T | T | C | A | T | C | C | T | G | A | T | G | T | T | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 348 | T | A | T | A | G | T | A | T | A | T | G | C | C | T | T | T | G | A | A | G | T | G | G | C | A | T | C | T | T | G | T | A | T | C | A |
| 349 | T | A | T | G | T | A | T | A | T | G | C | T | T | T | T | G | A | A | G | T | G | G | C | A | T | C | T | T | G | T | A | T | C | A | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 383 | C | A | G | C | A | G | C | A | A | C | A | C | A | A | C | G | A | G | A | C | T | T | T | T | C | A | C | A | C | C | C | A | A | C | |
| 384 | C | A | G | C | A | G | C | A | A | C | A | C | A | A | C | G | A | G | A | C | T | T | T | T | C | A | C | A | C | C | C | A | A | C | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 418 | C | T | C | T | T | C | C | T | G | A | A | G | C | A | G | A | T | G | C | T | A | G | A | G | G | T | A | C | C | A | A | A | A | A | |
| 419 | C | T | C | T | T | C | C | T | G | A | A | G | C | A | G | A | T | G | C | T | G | A | G | A | G | A | T | A | C | C | A | A | A | A | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 453 | C | A | A | C | A | G | C | C | C | T | C | C | A | A | A | C | A | A | T | G | A | T | G | A | C | C | A | A | G | T | G | G | A | A | A |
| 454 | C | A | A | C | A | G | T | C | C | C | A | A | C | A | A | C | A | A | T | G | A | T | G | A | C | C | A | A | T | G | G | A | A | A | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 488 | A | C | A | A | T | G | G | A | G | T | C | A | C | C | A | A | A | A | C | C | T | G | G | G | A | C | A | G | G | C | T | C | A | T | G |
| 489 | A | C | A | A | T | G | G | A | G | T | C | A | C | C | A | A | G | A | C | C | T | G | G | G | A | C | A | G | A | C | T | T | A | T | G |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 523 | C | T | C | C | A | G | G | A | C | A | A | T | T | G | C | T | G | T | G | G | C | G | T | A | A | A | T | G | G | T | C | C | A | T | C |
| 524 | C | T | C | C | A | G | G | A | C | A | A | T | T | G | C | T | G | T | G | G | T | G | T | A | A | A | T | G | G | C | C | C | G | T | C |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

FIGURE 5B

09/830328

17/22

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------------|
| 558 | A G A C T G G C A A A A A T A C A C A T C T G C C C T T C C G G A C T G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 559 | A G A C T G G C A G A A A T A C A C C T C T G C C C T T C C G G A C T G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 593 | A G A A T A A T G A T G C C T G A C T A T C C C T G G C C C T C G T C A A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 594 | A G A A C A G C G A T G C T G A C T A C C C C T G G C C C T C G T C A A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 628 | T G C C T G T G T T A T G A A C A A T C T T A A A G A A C C T C T C A A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 629 | T G C C T G T G T T A T G A A C A G C C T T A A A G A A C C T C T C A A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 663 | C C T G G A G G C C T T G T A A A C T A G G C G T G C C C T G G T T T T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 664 | C C T G G A C G C C C T G C A A A T T A G G A G T G C C C T G G A T A C T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 698 | A T C A C A A T C A G G G C C T G C C T A T G A A C T G A T C T C T G G T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 699 | A C C A T A G T C A T G G C C T G C C T A T G A G C T G A T C T C T G G A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 733 | C C A A T G A A C C G A C A C G C C C T G G G G G G T T G C C T G G T T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 734 | C C A A T G A A C C G A C A T G C C C T G G G G A G T T G C A T G G T T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 768 | T G G A T T T G C C C A T T C C T C T G C C T G G A C T T T T T G G G T T C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 769 | T G G A T T T G C C C A T T C C T C T G T T G G A C T T T C T G G G T T C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |
| 803 | T C C C T G G G T A C C A T G T T C T A C T G G A G C A G A A T T G A A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2651154dna |
| 804 | T C C C T G G G T A C C A T G T T C T A C T G G A G C A G A A T T G A C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | g443784 |

FIGURE 5C

18/22

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 838 | T | A | T | A | A | G | C | A | T | A | A | G | T | G | T | T | G | C | C | A | C | C | A | T | A | C | C | T | C | C | T | T | C | | |
| 839 | T | A | T | A | A | G | A | A | T | G | A | A | G | T | G | T | A | T | G | C | A | C | C | A | T | A | C | C | A | C | T | C | C | | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 873 | C | C | C | G | A | G | T | G | A | C | T | C | T | G | G | A | T | T | T | G | G | T | G | C | T | G | G | A | A | C | C | A | G | C | T |
| 874 | C | A | C | - | A | G | T | G | A | C | T | T | T | G | G | A | T | T | T | G | G | T | G | C | T | G | G | A | A | T | - | G | C | T | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 908 | C | T | C | T | C | C | T | A | A | T | A | T | T | C | C | A | C | G | T | T | T | G | T | G | C | C | C | A | C | - | - | - | A | | |
| 907 | G | T | C | T | C | C | T | A | A | T | G | T | T | C | T | A | C | C | T | T | T | G | T | G | C | T | G | C | C | G | G | A | A | | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 939 | C | T | A | A | C | G | T | G | T | C | T | T | A | C | A | T | T | G | C | C | A | A | G | T | C | A | G | A | T | G | G | | | | |
| 942 | C | T | T | A | C | G | C | A | T | T | C | T | T | C | T | A | C | A | T | T | G | C | C | A | A | G | T | A | C | G | T | T | G | G | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 974 | T | A | C | G | G | A | C | T | T | C | C | T | T | A | G | G | A | T | C | T | C | A | G | G | C | T | T | C | T | G | C | A | G | T | |
| 977 | T | A | T | G | G | G | G | T | T | C | C | T | T | A | A | G | C | T | C | T | C | A | G | A | C | T | - | C | T | G | A | A | T | | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1009 | T | C | T | C | A | T | G | A | C | T | C | C | T | A | C | T | T | T | C | A | T | C | C | T | A | G | T | C | T | A | G | C | A | T | |
| 1011 | T | T | T | C | A | G | C | A | C | A | T | G | T | G | - | T | T | T | T | C | A | C | C | C | T | G | A | T | C | T | A | G | G | A | T |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1044 | T | C | T | G | C | A | A | C | A | T | T | T | A | T | A | T | A | G | A | C | T | G | T | T | G | A | A | - | - | G | G | A | G | A | |
| 1045 | T | C | T | G | C | A | A | C | A | T | T | G | T | T | A | T | A | G | A | C | T | G | T | A | G | G | A | A | A | G | G | G | A | G | C |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1077 | A | T | T | T | G | A | A | - | A | A | T | G | C | A | T | A | A | T | A | A | C | T | A | C | T | T | C | C | A | T | C | C | C | T | |
| 1080 | A | T | T | A | G | G | A | T | A | G | T | A | G | A | T | A | A | T | A | A | C | T | A | T | T | C | C | A | T | C | T | T | T | | |
| | 2651154dna g443784 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

FIGURE 5D

| | | |
|------|---|------------|
| 1111 | G C T T A T T T T A A T T T G G G A A A A T A A A T A C A T T C G A | 2651154dna |
| 1115 | G T T T A T T T T A A T G T G G G G G C A T A A A G A C A T T C C T | g443784 |
| 1146 | A G G A A - - - - - - - - - - A A A C A A A A - - - - - | 2651154dna |
| 1150 | A G G A A C C T G T G T T A T A C T G C A A G C C A A G T C T G T A T | g443784 |
| 1159 | - | 2651154dna |
| 1185 | T G G G A C A G C A A A T C T G C C T G T A T T T C T C A C T G C T T | g443784 |
| 1159 | - - - A A A A G - - - - - G G C G G C C C C C G A T T - - - - - A T | 2651154dna |
| 1220 | T C T A A A A G T A C C C T G A T G G C A C C C C A C T C C A G T A C | g443784 |
| 1180 | T - | 2651154dna |
| 1255 | T C T T G C C T G G A A A T C C C A T G G A C G G A G C C T G | g443784 |
| 1190 | - | 2651154dna |
| 1290 | A T G G G C T G C A G T C C A T G G G T C G C A A A G A G T C G G A C | g443784 |
| 1195 | C C G A - | 2651154dna |
| 1325 | C C G A C T G G G C G A C T T C A C T T T C A C T T T C | g443784 |
| 1209 | A T G T A - | 2651154dna |
| 1360 | A T G C A T T G G A G A A G G A A A T G G C A A C C C A C T C C A G T | g443784 |

FIGURE 5E

20/22

1225 - - - - - C C G G G G - - - - - 2651154dna
1395 G T C T T G C C T G G A G A A T C C C A G G G A T G G A G G A G C C g443784

1231 - - - - - T G G A G G G C T G C C G T C T A T G G G G T C A C A G A G T C G 2651154dna
1430 T G G A G G G C T G C C G T C T A T G G G G T C A C A G A G T C G g443784

1231 - - - - - T A A A - - - - - 2651154dna
1465 G A C A C G A C T G A A G C G A C T T A G C A G C A G C A G C A g443784

1235 - - - - - A T T G T A - - - - - A T C C C - - - - - 2651154dna
1500 A A G G C T T C A T T G T A T C A G T A T T G T C C C A G T G A G A g443784

1246 - - - - - G A A C T A A G G A G A A G A C T G C T G A A A C A T C T T T G A A 2651154dna
1535 G A A C T A A G G A G A A G A C T G C T G A A A C A T C T T T G A A g443784

1246 - - - - - T T T G T T C T A T G G T G G C T C C C A C C T A C A G A C T C A A G 2651154dna
1570 T T T G T T C T A T G G T G G C T C C C A C C T A C A G A C T C A A G g443784

1251 - A A T T C C C C - A A A A C - - - - - 2651154dna
1605 T G A T T C T C T T A A A G C T A G C T T G G G A A C C C T T A T T g443784

1264 - - - - - A T A G G G C C C G - - - - - 2651154dna
1640 A T C C A A G A C A A G G C C T G A T C T T G A A C A A C A G T G G g443784

FIGURE 5F

| | | |
|------|---|------------|
| 1274 | - - G A A G C C T - - - - - - - - - - A A A G T - - - - - | 2651154dna |
| 1675 | T T G A A A T T T C C T C T C A G A C A C T G C A G A G T A A T T C A | g443784 |
| 1286 | - T T A A A A - - - | 2651154dna |
| 1710 | T G C T G G T A A C C T C A A T T C T C C C A C T A A T T A A A A G T | g443784 |
| 1292 | - G G G G G C C T - - - - - | 2651154dna |
| 1745 | A C G T G A A C T T T T G G G A C A A A G G A G A C C T G T T A C | g443784 |
| 1306 | - | 2651154dna |
| 1780 | A C A T T A C C A C C T T C A A C C T A A A C T G C T T T C C A A | g443784 |
| 1306 | - - - - - A A G G A G T - - - - - - - - - - T T A C C - - - - - | 2651154dna |
| 1815 | C A G G G A A G A A G C A A G C C A G C T G T T A C T T A G G T G A T | g443784 |
| 1318 | - C A A A - - - - - | 2651154dna |
| 1850 | T T A G G G T G A T C T G T G C A C T G C A A A A T A T T T T C T T | g443784 |
| 1322 | - - - - - - - - - - C T C C C T T T C - - - - - - - - - - - - - - | 2651154dna |
| 1885 | C T G A T C T G T T T C C C T T T T G T G A T C C T G A A G G A A T T T | g443784 |
| 1331 | - | 2651154dna |
| 1920 | C T T A T A C A A C A T T T G T C T T T A T A T A A A T A A A G A G | g443784 |

FIGURE 5G

22/22

2651154dna
g443784

1331 - - - - - T
1955 A G T T T A A A T

FIGURE 5H